

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
3 August 2006 (03.08.2006)

PCT

(10) International Publication Number
WO 2006/080025 A1

(51) International Patent Classification:
C07D 417/14 (2006.01)

(21) International Application Number:
PCT/IN2005/000030

(22) International Filing Date: 27 January 2005 (27.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **HET-ERO DRUGS LIMITED** [IN/IN]; Hetero House, 8-3-166/7/1, Erragadda, Hyderabad, Andhrapradesh, Hyderabad 500018 (IN).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PARTHASARADHI REDDY, bandi** [IN/IN]; Hetero House, 8-3-166/7/1, Erragadda, Hyderabad, Andhrapradesh, Hyderabad 500018 (IN). **RATHNAKAR REDDY, kura** [IN/IN]; Hetero Drugs Limited (R & D), Plot No. B-80 & 81, A.P.I.E., Balanagar, Hyderabad 500018 (IN). **RAJI REDDY, rapolu** [IN/IN]; Hetero Drugs Limited (R & D), Plot No. B-80 & 81, A.P.I.E., Balanagar, Hyderabad 500018 (IN). **MURALIDHARA REDDY, dasari** [IN/IN]; Hetero Drugs Limited (R & D), Plot No. B-80 & 81, A.P.I.E., Balanagar, Hyderabad 500018 (IN). **SRINIVAS REDDY, Itiyala** [IN/IN]; Hetero House, 8-3-166/7/1, Erragadda, Hyderabad, Andhrapradesh, Hyderabad 500 018 (IN).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS FOR ZIPRASIDONE USING NOVEL INTERMEDIATES

(57) Abstract: The present invention relates to a novel process for the preparation of high purity ziprasidone and pharmaceutically acceptable acid addition salts of ziprasidone; and solvates and hydrates thereof using novel intermediates and a purification method for ziprasidone and pharmaceutically acceptable acid addition salts of ziprasidone; and solvates and hydrates thereof. Thus, 1-(1,2-benzisothiazol-3-yl)piperazine is silylated with trimethylsilylchloride in methylene chloride in the presence of triethylamine and the solvent is distilled off to obtain silylated 1-(1,2-benzisothiazol-3-yl)piperazine. The silylated compound is reacted with 5-(2-chloroethyl)-6-chloro-oxindole in the presence of sodium carbonate to obtain ziprasidone.

WO 2006/080025 A1